

**State of California**  
**California Regional Water Quality Control Board, Los Angeles Region**

**RESOLUTION NO. R05-007**

**July 7, 2005**

**Amendment to the *Water Quality Control Plan for the Los Angeles Region* to  
Incorporate a Total Maximum Daily Load for Metals in Ballona Creek**

**WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region, finds that:**

1. The Federal Clean Water Act (CWA) requires the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) to develop water quality objectives, which are sufficient to protect beneficial uses for each water body found within its region. Water bodies that do not meet water quality objectives or support beneficial uses are considered impaired.
2. A consent decree between the U.S. Environmental Protection Agency (USEPA), Heal the Bay, Inc. and BayKeeper, Inc. was approved on March 22, 1999. This court order directs the USEPA to complete Total Maximum Daily Loads (TMDLs) for all impaired waters within 13 years. A schedule was established in the consent decree for the completion of the first 29 TMDLs within 7 years, including completion of a TMDL to reduce metals in Ballona Creek by USEPA by March 22, 2005. The remaining TMDLs will be scheduled by Regional Board staff within the 13-year period.
3. USEPA and the consent decree plaintiffs agreed to extend the completion deadline for the Ballona Creek Metals TMDL to December 22, 2005, in order to enable the State to complete its adoption process and USEPA to approve the State-adopted TMDL.
4. The elements of a TMDL are described in 40 CFR 130.2 and 130.7 and section 303(d) of the CWA, as well as in USEPA guidance documents (Report No. EPA/440/4-91/001). A TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources and natural background (40 CFR 130.2). Regulations further stipulate that TMDLs must be set at levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality (40 CFR 130.7(c)(1)). The regulations in 40 CFR 130.7 also state that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters.
5. The numeric targets in this TMDL are not water quality objectives and do not create new bases for enforcement against dischargers apart from the existing, numeric water quality standards they translate. The targets merely establish the bases through which load allocations (LAs) and waste load allocations (WLAs) are calculated. WLAs are only enforced for a discharger's own discharges, and then only in the context of its National Pollutant Discharge Elimination System (NPDES) permit, which must contain effluent limits consistent with the assumptions and requirements of the WLA. (40 CFR 122.44(d)(vii)(B).) The Regional Board will develop permit requirements through subsequent permit actions that

will allow all interested persons, including but not limited to municipal storm water dischargers, to provide comments on how the WLA will be translated into permit requirements.

6. As envisioned by Water Code section 13242, the TMDL contains a "description of surveillance to be undertaken to determine compliance with objectives." The Compliance Monitoring and Special Studies elements of the TMDL recognize that monitoring will be necessary to assess the on-going condition of Ballona Creek and to assess the on-going effectiveness of efforts by dischargers to reduce metals loading to Ballona Creek. Special studies may also be appropriate to provide further information about new data, new or alternative sources, and revised scientific assumptions. The TMDL does not establish the requirements for these monitoring programs or reports, although it does recognize the type of information that will be necessary to secure. The Regional Board's Executive Officer will issue orders to appropriate entities to develop and to submit monitoring programs and technical reports. The Executive Officer will determine the scope of these programs and reports, taking into account any legal requirements, and issue the orders to the appropriate entities.
7. Upon establishment of TMDLs by the State or USEPA, the State is required to incorporate the TMDLs along with appropriate implementation measures into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). This Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board. Attachment A to this resolution contains the Basin Planning language for this TMDL.
8. Ballona Creek flows as an open channel for just under 10 miles from Los Angeles (South of Hancock Park) through Culver City, reaching the Pacific Ocean at Playa del Rey. Ballona Creek and its tributaries drain a watershed with an area of approximately 128 square miles. The Ballona Creek watershed is comprised of the Cities of Beverly Hills and West Hollywood, and parts of the Cities of Culver City, Inglewood, Los Angeles, Santa Monica, and unincorporated areas of Los Angeles County. The proposed TMDL addresses impairments of water quality caused by metals in Ballona Creek and Sepulveda Canyon Channel.
9. On May 18, 2000, the USEPA promulgated numeric criteria for priority pollutants for the State of California, known as the California Toxics Rule (CTR), codified as 40 CFR section 131.38. Federal water quality standards under section 303 of the Clean Water Act consist of designated uses and criteria to protect those uses. (40 CFR 131.3(i).) Designated uses are beneficial uses under state law, and criteria are water quality objectives under state law. The CTR establishes the numeric water quality objectives for various toxic pollutants. These objectives apply "without exception" to all inland surface waters within the State of California, including the Los Angeles region. (40 CFR 131.38(d)(1)-(2).)
10. "[I]t is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." (33 U.S.C. 1251(a)(3).) Water quality standards, including the CTR, reflect this express national policy of Congress. When a pollutant is present at levels in excess of the CTR numbers, then the pollutant is present in toxic amounts. In this sense, the numeric objectives in the CTR are USEPA's determination of when priority pollutants are present at toxic amounts in contravention of Congress's national policy.

11. The Regional Board's goal in establishing the Ballona Creek Metals TMDL is to protect the aquatic life and wildlife beneficial uses of Ballona Creek and to achieve the numeric water quality objectives set to protect these uses as contained in the CTR.
12. Regional Board staff have prepared a detailed technical document that analyzes and describes the specific necessity and rationale for the development of this TMDL. The technical document entitled "Ballona Creek Metals TMDL" is an integral part of this Regional Board action and was reviewed, considered, and accepted by the Regional Board before acting. Further, the technical document provides the detailed factual basis and analysis supporting the problem statement, numeric targets (interpretation of the narrative and numeric water quality objectives, used to calculate the pollutant allocations), source analysis, linkage analysis, waste load allocations (for point sources), load allocation (for nonpoint sources), margin of safety, and seasonal variations and critical conditions of this TMDL.
13. On July 7, 2005, prior to the Board's action on this resolution, public hearings were conducted on the Ballona Creek Metals TMDL. Notice of the hearings were sent to all known interested persons and published in the Los Angeles Times on March 27, 2005 in accordance with the requirements of Water Code Section 13244.
14. The public has had reasonable opportunity to participate in review of the amendment to the Basin Plan. A draft of the Ballona Creek Metals TMDL was originally released for public comment on July 12, 2004. The Regional Board held a workshop to receive testimony on the proposed TMDL on September 2, 2004. Regional Board staff responded to oral and written comments received from the public on the first draft and released a revised draft TMDL for public comment on March 28, 2005. A Notice of Hearing and Notice of Filing were published and circulated 45 days preceding Board action, and Regional Board staff responded to oral and written comments received from the public on the revised draft.
15. In amending the Basin Plan, the Regional Board considered the requirements set forth in Sections 13240 and 13242 of the California Water Code.
16. Because the TMDL implements existing numeric water quality objectives (i.e., the numeric water quality criteria established by USEPA in the CTR), the Regional Board has consistently maintained (along with the State Water Resources Control Board) that adopting a TMDL does not require the water boards to consider the factors of Water Code section 13241. The consideration of the Water Code section 13241 factors, by section 13241's express terms, only applies "in establishing water quality objectives." Here the Regional Board is not establishing water quality objectives, but as required by section 303(d)(1)(C) of the Clean Water Act is adopting a TMDL that will implement the previously established objectives that have not been achieved.
17. While the Regional Board is not required to consider the factors of Water Code section 13241, it, nonetheless, has developed and received significant information pertaining to the Water Code section 13241 factors and considered that information in developing and adopting this TMDL. The past, present, and probable future beneficial uses of water have been considered in that Ballona Creek is designated for a multitude of beneficial uses in the Basin Plan. Various living organisms (including vegetation, fish, invertebrates, and wildlife) are present in, transient through, and will be present in Ballona Creek. The fact that some flows are intermittent or, as characterized by some commentators "nuisance flows," does not diminish this fact. The environmental characteristics of Ballona Creek are spelled out at length in the Basin Plan and in the technical documents supporting this Basin Plan

amendment, and have been considered in developing this TMDL. Water quality conditions that reasonably could be achieved through the coordinated control of all factors which affect water quality in the area have been considered via the discussion of likely means of compliance, and studies indicating that a mix of best management practices (BMPs), rather than advanced treatment plants, would achieve the water quality criteria established in the CTR. Authorizing certain storm water dischargers to rely on BMPs in the first instances reflects the reasonableness of the action in terms of the ability to implement the requirements, as well as a belief that the water quality conditions can reasonably be achieved in any event. Establishing a plan that will ensure Ballona Creek is not toxic is a reasonable water quality condition. However, to the extent that there would be any conflict between the consideration of the factor in Water Code section 13241 subdivision (c), if the consideration were required, and the Clean Water Act, the Clean Water Act would prevail. Notably, national policy established by Congress prohibits the discharge of toxic pollutants in toxic amounts. Economic considerations were considered throughout the development of the TMDL. Some of these economic considerations arise in the context of Public Resources Code section 21159 and are equally applicable here. The TMDL maps out a 15-year approach to implementing national policy prohibiting toxic pollutants in toxic amounts. This implementation program recognizes the economic limitations on achieving immediate compliance—especially for municipal storm water dischargers. The TMDL also authorizes the use of BMPs, to the extent authorized by law, for various storm water dischargers. Again, these recognize the economic limitations on certain storm water dischargers, while remaining faithful to the requirement to implement existing water quality standards and national policy. As part of this economic consideration, the Regional Board considered several studies pertaining to storm water (some submitted by dischargers showing costs as high as several hundred billion to implement all water quality standards in the Basin Plan through advanced treatment plants and some developed by the State Water Resources Control Board and Regional Board through economic studies prepared by professors at the University of Southern California, the University of California at Los Angeles, California State University at Sacramento showing costs of several billion dollars to implement all water quality standards in the Basin Plan using a mix of BMPs). The former studies consist of worst-case assumptions and these studies' high-end figures assume the widespread construction of treatment facilities. Based on existing policy geared toward BMPs and the latter studies, these assumptions are unrealistic. While section 13241 of the Water Code does not require a balancing of the costs and benefits, the latter studies also conclude that any costs would be outweighed by the societal and economic benefits to Los Angeles' coastal economy. Again, these "economic considerations" were all considered and are reflected in an implementation program that is flexible and allows 15 years to comply with the final WLAs. The need for housing within the region has been considered, but this TMDL is unlikely to affect housing needs. Whatever housing impacts could materialize are ameliorated by the flexible nature of this TMDL and the 15-year implementation period. Finally, the TMDL is likely to facilitate the use of recycled water, as demonstrated by the City of Los Angeles' Integrated Resources Plan.

18. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that it does not authorize any lowering of water quality and is designed to implement existing water quality objectives. Likewise, the amendment is consistent with the federal Antidegradation Policy (40 CFR 131.12).
19. Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq) requirements for preparing environmental documents. (14 Cal.

Code Regs. § 15251(g); 23 Cal. Code Regs. § 3782.) As such, the Regional Water Board's basin planning documents together with an Environmental Checklist, are the "substitute documents" that contain the required environmental documentation under CEQA. (23 Cal Code Regs. § 3777.) The detailed technical report entitled "Total Maximum Daily Loads for Metals in Ballona Creek," responses prepared by staff to address comments raised during the development of the TMDL, this resolution, and the Environmental Checklist serve as the substitute documents for this project. The project itself is the establishment of a TMDL for toxic metals in Ballona Creek. While the Regional Board has no discretion to not establish a TMDL (the TMDL is required by federal law) or for determining the water quality standard to be applied (the CTR establishes the numeric water quality objectives that must be implemented), the Board does exercise discretion in assigning waste load allocations and load allocations, determining the program of implementation, and setting various milestones in achieving the numeric water quality standards established in the CTR.

20. A CEQA Scoping hearing was conducted on June 12, 2003 at the Los Angeles Regional Water Quality Control Board, 320 W. 4th Street, Los Angeles, CA 90013. A notice of the CEQA Scoping hearing was sent to interested parties including cities and/or counties with jurisdiction in or bordering the Ballona Creek watershed.
21. The lengthy implementation period allowed by the TMDL, will allow many compliance approaches to be pursued. In preparing the accompanying CEQA substitute documents, the Regional Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends the substitute documents to serve as a tier 1 environmental review. Nearly all of the compliance obligations will be undertaken by public agencies that will have their own obligations under CEQA. Project level impacts will need to be considered in any subsequent environmental analysis performed by other public agencies, pursuant to Public Resources Code section 21159.2. If not properly mitigated at the project level, there could be adverse environmental impacts. The substitute documents for this TMDL, and in particular the checklist and staff's responses to comments, identify broad mitigation approaches that should be considered at the project level. Consistent with CEQA, the substitute documents do not engage in speculation or conjecture and only consider the reasonably foreseeable environmental impacts of the methods of compliance, the reasonably foreseeable feasible mitigation measures, and the reasonably foreseeable alternative means of compliance, which would avoid or eliminate the identified impacts.
22. The proposed amendment could have a significant adverse effect on the environment. However, there are feasible alternatives, feasible mitigation measures, or both that would substantially lessen any significant adverse impact. The public agencies responsible for those parts of the project can and should incorporate such alternatives and mitigation into any subsequent projects or project approvals. Possible alternatives and mitigation are described in the CEQA substitute documents, specifically the TMDL technical report and the Environmental Checklist. To the extent the alternatives, mitigation measures, or both are not deemed feasible by those agencies, the necessity of implementing the federally required metals TMDL and removing the metals-related toxicity impairment from Ballona Creek (an action required to achieve the express, national policy of the Clean Water Act) outweigh the unavoidable adverse environmental effects.
23. Health and Safety Code section 57004 requires external scientific peer review for certain water quality control policies. Prior to public notice of the draft TMDL, the Regional Board submitted the scientific basis and scientific portions of the Ballona Creek Metals TMDL to

the University of California for external scientific peer review. A written peer review report was received by the Regional Board. Minor modifications were made to the scientific portions of the TMDL to address concerns identified during the peer review process.

24. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, Section 11353, Subdivision (b). As specified above, federal regulations require that TMDLs be incorporated into the water quality management plan. The Regional Board's Basin Plan is the Regional Board's component of the water quality management plan, and the Basin Plan is how the Regional Board takes quasi-legislative, planning actions. Moreover, the TMDL is a program of implementation for existing water quality objectives, and is, therefore, appropriately a component of the Basin Plan under Water Code section 13242. The necessity of developing a TMDL is established in the TMDL staff report, the section 303(d) list, and the data contained in the administrative record documenting the metals impairments of Ballona Creek and Sepulveda Channel.
25. The Basin Plan amendment incorporating a TMDL for metals in Ballona Creek must be submitted for review and approval by the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL), and the USEPA. The Basin Plan amendment will become effective upon approval by USEPA. A Notice of Decision will be filed with the Resources Agency.
26. The Regional Board has previously endorsed integrated water resources approaches to addressing Municipal Separate Storm Sewer System (MS4) implementation of TMDLs. The Regional Board believes integrated approaches require additional time for planning and development and are suitable for the 15-year implementation period discussed in this TMDL. As presently proposed, the TMDL implementation program does not distinguish between integrated and nonintegrated approaches. Further consideration of an implementation schedule incorporating and establishing incentives for an integrated water-resources approach, similar to the Santa Monica Bay Beaches Bacteria TMDL, is appropriate.

**THEREFORE, be it resolved that pursuant to sections 13240 and 13242 of the Water Code, the Regional Board hereby amends the Basin Plan as follows:**

1. Pursuant to Sections 13240 and 13242 of the California Water Code, the Regional Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the amendments to Chapter 7 of the Water Quality Control Plan for the Los Angeles Region, as set forth in Attachment A hereto, to incorporate the elements of the Ballona Creek Metals TMDL.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Board in accordance with the requirements of section 13245 of the California Water Code.
3. The Regional Board requests that the State Board approve the Basin Plan amendment in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward it to OAL and the USEPA.
4. If during its approval process Regional Board staff, the State Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or

consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.

5. The Executive Officer is authorized to sign a Certificate of Fee Exemption.
6. Regional Board staff are directed to explore and to propose revisions to the TMDL implementation schedule that incorporate an integrated water resources approach, similar to the implementation program in the Santa Monica Bay Beaches Bacteria TMDL. The Regional Board will consider any revisions proposed by staff, but is not committing to any particular course of action.

I, Jonathan Bishop, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on July 7, 2005.



---

Jonathan Bishop  
Executive Officer

7/15/05

---

Date

# Attachment A to Resolution No. R05-007

## Amendment to the Water Quality Control Plan – Los Angeles Region to incorporate the Ballona Creek Metals TMDL

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on July 7, 2005.

### Amendments:

#### Table of Contents

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries  
7-12 Ballona Creek Metals TMDL

#### List of Figures, Tables and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)  
Tables  
7-12 Ballona Creek Metals TMDL  
7-12.1. Ballona Creek Metals TMDL: Elements  
7-12.2. Ballona Creek Metals TMDL: Implementation Schedule

#### Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-12 (Ballona Creek Metals TMDL)

Add:

This TMDL was adopted by the Regional Water Quality Control Board on July 7, 2005.

This TMDL was approved by:

The State Water Resources Control Board on [Insert Date].  
The Office of Administrative Law on [Insert Date].  
The U.S. Environmental Protection Agency on [Insert Date].

The following tables include the elements of this TMDL.

## Attachment A to Resolution No. R05-007

**Table 7-12.1. Ballona Creek and Ballona Creek Estuary Metals TMDL: Elements**

Element	Key Findings and Regulatory Provisions																								
<p><b><i>Problem Statement</i></b></p>	<p>Ballona Creek is on Clean Water Act Section 303(d) list of impaired waterbodies for dissolved copper, dissolved lead, total selenium, and dissolved zinc and Sepulveda Canyon Channel is 303(d) listed for lead. The metals subject to this TMDL are toxic pollutants, and the existing water quality objectives for the metals reflect national policy that the discharge of toxic pollutants in toxic amounts be prohibited. When one of the metals subject to this TMDL is present at levels exceeding the existing numeric objectives, then the receiving water is toxic. The following designated beneficial uses are impaired by these metals: water contact recreation (REC1); non-contact water recreation (REC2); warm freshwater habitat (WARM); estuarine habitat (EST); marine habitat (MAR); wildlife habitat (WILD); rare and threatened or endangered species (RARE); migration of aquatic organisms (MIGR); reproduction and early development of fish (SPWN); commercial and sport fishing (COMM); and shellfish harvesting (SHELL).</p> <p>TMDLs are developed for reaches on the 303(d) list and metal allocations are developed for tributaries that drain to impaired reaches. This TMDL address dry- and wet-weather discharges of copper, lead, selenium and zinc in Ballona Creek and Sepulveda Canyon Channel.</p>																								
<p><b><i>Numeric Target</i></b> <i>(Interpretation of the narrative and numeric water quality objective, used to calculate the load allocations)</i></p>	<p>Numeric water quality targets are based on the numeric water quality standards established for metals by the California Toxics Rule (CTR). The targets are expressed in terms of total recoverable metals. There are separate numeric targets for dry and wet weather because hardness values and flow conditions in Ballona Creek and Sepulveda Canyon Channel vary between dry and wet weather. The dry-weather targets apply to days when the maximum daily flow in Ballona Creek is less than 40 cubic feet per second (cfs). The wet-weather targets apply to days when the maximum daily flow in Ballona Creek is equal to or greater than 40 cfs.</p> <p><b>Dry Weather</b></p> <p>The dry-weather targets are based on the chronic CTR criteria. The copper, lead and zinc targets are dependent on hardness to adjust for site-specific conditions and require conversion factors to convert between dissolved and total recoverable metals. These targets are based on the 50<sup>th</sup> percentile hardness value of 300 mg/L and the CTR default conversion factors. The conversion factor for lead is hardness dependent, which is also based on a hardness of 300 mg/L. The dry-weather target for selenium is independent of hardness and expressed as total recoverable metals.</p> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="4" style="text-align: center; border-bottom: 1px solid black;"><b>Dry-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b></th> </tr> <tr> <th style="width: 30%;"></th> <th style="width: 20%; text-align: center; border-bottom: 1px solid black;">Dissolved</th> <th style="width: 20%; text-align: center; border-bottom: 1px solid black;">Conversion Factor</th> <th style="width: 30%; text-align: center; border-bottom: 1px solid black;">Total Recoverable</th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td style="text-align: center;">23</td> <td style="text-align: center;">0.96</td> <td style="text-align: center;">24</td> </tr> <tr> <td>Lead</td> <td style="text-align: center;">8.1</td> <td style="text-align: center;">0.631</td> <td style="text-align: center;">13</td> </tr> <tr> <td>Selenium</td> <td></td> <td></td> <td style="text-align: center;">5</td> </tr> <tr> <td>Zinc</td> <td style="text-align: center;">300</td> <td style="text-align: center;">0.986</td> <td style="text-align: center;">304</td> </tr> </tbody> </table>	<b>Dry-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b>					Dissolved	Conversion Factor	Total Recoverable	Copper	23	0.96	24	Lead	8.1	0.631	13	Selenium			5	Zinc	300	0.986	304
<b>Dry-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b>																									
	Dissolved	Conversion Factor	Total Recoverable																						
Copper	23	0.96	24																						
Lead	8.1	0.631	13																						
Selenium			5																						
Zinc	300	0.986	304																						

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions																								
	<p><b>Wet Weather</b></p> <p>The wet-weather targets for copper, lead and zinc are based on the acute CTR criteria and the 50<sup>th</sup> percentile hardness value of 77 mg/L for storm water collected at Sawtelle Boulevard. Conversion factors for copper and zinc are based on a regression of dissolved metal values to total metal values collected at Sawtelle. The CTR default conversion factor based on a hardness value of 77 mg/L is used for lead. The wet-weather target for selenium is independent of hardness and expressed as total recoverable metals.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4" style="text-align: center;"><b>Wet-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b></th> </tr> <tr> <th></th> <th style="text-align: center;">Dissolved</th> <th style="text-align: center;">Conversion Factor</th> <th style="text-align: center;">Total Recoverable</th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td style="text-align: center;">11</td> <td style="text-align: center;">0.62</td> <td style="text-align: center;">18</td> </tr> <tr> <td>Lead</td> <td style="text-align: center;">49</td> <td style="text-align: center;">0.829</td> <td style="text-align: center;">59</td> </tr> <tr> <td>Selenium</td> <td></td> <td></td> <td style="text-align: center;">5</td> </tr> <tr> <td>Zinc</td> <td style="text-align: center;">94</td> <td style="text-align: center;">0.79</td> <td style="text-align: center;">119</td> </tr> </tbody> </table>	<b>Wet-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b>					Dissolved	Conversion Factor	Total Recoverable	Copper	11	0.62	18	Lead	49	0.829	59	Selenium			5	Zinc	94	0.79	119
<b>Wet-weather numeric targets (<math>\mu\text{g}</math> total recoverable metals/L)</b>																									
	Dissolved	Conversion Factor	Total Recoverable																						
Copper	11	0.62	18																						
Lead	49	0.829	59																						
Selenium			5																						
Zinc	94	0.79	119																						
<b>Source Analysis</b>	<p>There are significant difference in the sources of copper, lead, selenium and zinc loadings during dry weather and wet weather. During dry weather, most of the metals loadings are in the dissolved form. Storm drains convey a large percentage of the metals loadings during dry weather because although their flows are typically low, concentrations of metals in urban runoff may be quite high. During dry years, dry-weather loadings account for 25-35% of the annual metals loadings. Additional sources of dry weather flow and metals loading include groundwater discharge and flows from other permitted NPDES discharges within the watershed.</p> <p>During wet weather, most of the metals loadings in Ballona Creek are in the particulate form and are associated with wet-weather storm water flows. On an annual basis, storm water contributes about 91% of the copper loading and 92% of the lead loading to Ballona Creek. Storm water flow is permitted through the municipal separate storm sewer system (MS4) permit issued to the County of Los Angeles, a separate Caltrans storm water permit, a general construction storm water permit, and a general industrial storm water permit.</p> <p>Non-point sources are not considered to be a significant source in this TMDL. Direct atmospheric deposition of metals is insignificant relative to the annual dry-weather loading or the total annual loading. Indirect atmospheric deposition reflects the process by which metals deposited on the land surface may be washed off during storm events and delivered to Ballona Creek and its tributaries. The loading of metals associated with indirect atmospheric deposition are accounted for in the estimates of the storm water loading.</p>																								

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions																									
<i>Loading Capacity</i>	<p>TMDLs are developed for copper, lead, selenium and zinc for Ballona Creek and Sepulveda Canyon Channel.</p> <p><b>Dry Weather</b></p> <p>Dry-weather loading capacities for Ballona Creek and Sepulveda Canyon Channel are equal to the dry-weather numeric targets multiplied by the critical dry-weather flow for each waterbody. Based on long-term flow records for Ballona Creek at Sawtelle the median dry-weather flow is 14 cfs. The median dry-weather flow for Sepulveda Canyon Channel, based on measurements conducted in 2003, is 6.3 cfs.</p> <p><b><u>Dry-weather loading capacity (grams total recoverable metals/day)</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Copper</th> <th style="text-align: center;">Lead</th> <th style="text-align: center;">Selenium</th> <th style="text-align: center;">Zinc</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td style="text-align: center;">821</td> <td style="text-align: center;">440</td> <td style="text-align: center;">171</td> <td style="text-align: center;">10,423</td> </tr> <tr> <td>Sepulveda Channel</td> <td style="text-align: center;">371</td> <td style="text-align: center;">199</td> <td style="text-align: center;">77</td> <td style="text-align: center;">4,712</td> </tr> </tbody> </table> <p><b>Wet Weather</b></p> <p>Wet-weather loading capacities are calculated by multiplying the daily storm volume by the wet-weather numeric target for each metal.</p> <p><b><u>Wet-weather loading capacity (total recoverable metals)</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Metal</u></th> <th style="text-align: left;"><u>Load Capacity</u></th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td>Daily storm volume x 18 µg/L</td> </tr> <tr> <td>Lead</td> <td>Daily storm volume x 59 µg/L</td> </tr> <tr> <td>Selenium</td> <td>Daily storm volume x 5 µg/L</td> </tr> <tr> <td>Zinc</td> <td>Daily storm volume x 119 µg/L</td> </tr> </tbody> </table>		Copper	Lead	Selenium	Zinc	Ballona Creek	821	440	171	10,423	Sepulveda Channel	371	199	77	4,712	<u>Metal</u>	<u>Load Capacity</u>	Copper	Daily storm volume x 18 µg/L	Lead	Daily storm volume x 59 µg/L	Selenium	Daily storm volume x 5 µg/L	Zinc	Daily storm volume x 119 µg/L
	Copper	Lead	Selenium	Zinc																						
Ballona Creek	821	440	171	10,423																						
Sepulveda Channel	371	199	77	4,712																						
<u>Metal</u>	<u>Load Capacity</u>																									
Copper	Daily storm volume x 18 µg/L																									
Lead	Daily storm volume x 59 µg/L																									
Selenium	Daily storm volume x 5 µg/L																									
Zinc	Daily storm volume x 119 µg/L																									
<i>Load Allocations (for nonpoint sources)</i>	<p>Load allocations (LA) are assigned to non-point sources for Ballona Creek and Sepulveda Canyon Channel.</p> <p><b>Dry Weather</b></p> <p>Dry-weather load allocations for copper, lead and zinc are developed for direct atmospheric deposition. The mass-based load allocations are equal to the ratio of the length of each segment over the total length multiplied by the estimates of direct atmospheric loading for Ballona Creek (3.5 g/day for copper, 2.3 g/day for lead, and 11.7 k/day for zinc).</p> <p><b><u>Dry-weather direct air deposition LAs (total recoverable metals)</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Copper (g/day)</th> <th style="text-align: center;">Lead (g/day)</th> <th style="text-align: center;">Zinc (g/day)</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td style="text-align: center;">2.0</td> <td style="text-align: center;">1.4</td> <td style="text-align: center;">6.8</td> </tr> <tr> <td>Sepulveda Channel</td> <td style="text-align: center;">0.3</td> <td style="text-align: center;">0.2</td> <td style="text-align: center;">0.9</td> </tr> </tbody> </table> <p><b>Wet Weather</b></p> <p>Wet-weather load allocations for copper, lead, selenium and zinc are developed for direct atmospheric deposition. The mass-based load allocations for direct atmospheric deposition are equal to the percent area of surface water (0.6%) multiplied by the total loading capacity.</p>		Copper (g/day)	Lead (g/day)	Zinc (g/day)	Ballona Creek	2.0	1.4	6.8	Sepulveda Channel	0.3	0.2	0.9													
	Copper (g/day)	Lead (g/day)	Zinc (g/day)																							
Ballona Creek	2.0	1.4	6.8																							
Sepulveda Channel	0.3	0.2	0.9																							

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions																																																										
	<p style="text-align: center;"><b><u>Wet-weather direct air deposition LAs (total recoverable metals)</u></b></p> <hr/> <p style="text-align: center;">Load Allocation (grams/day)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Copper</td> <td style="width: 20%;">1.05E-07</td> <td style="width: 10%;">x</td> <td style="width: 40%;">Daily storm volume (L)</td> </tr> <tr> <td>Lead</td> <td>3.54E-07</td> <td>x</td> <td>Daily storm volume (L)</td> </tr> <tr> <td>Selenium</td> <td>3.00E-08</td> <td>x</td> <td>Daily storm volume (L)</td> </tr> <tr> <td>Zinc</td> <td>7.14E-07</td> <td>x</td> <td>Daily storm volume (L)</td> </tr> </table>	Copper	1.05E-07	x	Daily storm volume (L)	Lead	3.54E-07	x	Daily storm volume (L)	Selenium	3.00E-08	x	Daily storm volume (L)	Zinc	7.14E-07	x	Daily storm volume (L)																																										
Copper	1.05E-07	x	Daily storm volume (L)																																																								
Lead	3.54E-07	x	Daily storm volume (L)																																																								
Selenium	3.00E-08	x	Daily storm volume (L)																																																								
Zinc	7.14E-07	x	Daily storm volume (L)																																																								
<i>Waste Load Allocations (for point sources)</i>	<p>Waste load allocations (WLA) are assigned to point sources for Ballona Creek and Sepulveda Canyon Channel. A grouped mass-based waste load allocation is developed for the storm water permittees (Los Angeles County MS4, Caltrans, General Construction and General Industrial) by subtracting the load allocation from the total loading capacity. Concentration-based waste load allocations are developed for other point sources in the watershed.</p> <p><b>Dry Weather</b></p> <p>Dry-weather waste load allocation for storm water is equal to the dry-weather critical flow multiplied by the dry-weather numeric target minus the load allocation for direct atmospheric deposition.</p> <p style="text-align: center;"><b><u>Dry-weather Storm Water WLAs (grams total recoverable metals/day)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;">Copper</th> <th style="width: 15%;">Lead</th> <th style="width: 15%;">Selenium</th> <th style="width: 15%;">Zinc</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td style="text-align: right;">818.9</td> <td style="text-align: right;">438.6</td> <td style="text-align: right;">171</td> <td style="text-align: right;">10,416.2</td> </tr> <tr> <td>Sepulveda Channel</td> <td style="text-align: right;">370.7</td> <td style="text-align: right;">198.8</td> <td style="text-align: right;">77</td> <td style="text-align: right;">4,711.1</td> </tr> </tbody> </table> <p>A waste load allocation of zero is assigned to all general construction and industrial storm water permits during dry weather. Therefore, the storm water waste load allocations are apportioned between the MS4 permittees and Caltrans, based on an areal weighting approach.</p> <p style="text-align: center;"><b><u>Dry-weather Storm Water WLAs Apportioned between Storm Water Permits (grams total recoverable metals/day)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;">Copper</th> <th style="width: 15%;">Lead</th> <th style="width: 15%;">Selenium</th> <th style="width: 15%;">Zinc</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b><u>Ballona Creek</u></b></td> </tr> <tr> <td>MS4 permittees</td> <td style="text-align: right;">807.7</td> <td style="text-align: right;">432.6</td> <td style="text-align: right;">169</td> <td style="text-align: right;">10,273.1</td> </tr> <tr> <td>Caltrans</td> <td style="text-align: right;">11.2</td> <td style="text-align: right;">6.0</td> <td style="text-align: right;">2</td> <td style="text-align: right;">143.1</td> </tr> <tr> <td colspan="5"><b><u>Sepulveda Channel</u></b></td> </tr> <tr> <td>MS4 Permittees</td> <td style="text-align: right;">365.6</td> <td style="text-align: right;">196.1</td> <td style="text-align: right;">76</td> <td style="text-align: right;">4646.4</td> </tr> <tr> <td>Caltrans</td> <td style="text-align: right;">5.1</td> <td style="text-align: right;">2.7</td> <td style="text-align: right;">1</td> <td style="text-align: right;">64.7</td> </tr> </tbody> </table> <p>Concentration-based dry-weather waste load allocations are assigned to the minor NPDES permits and general non-storm water NPDES permits that discharge to Ballona Creek or its tributaries. Any future minor NPDES permits or enrollees under a general non-storm water NPDES permit will also be subject to the concentration-based waste load allocations.</p> <p style="text-align: center;"><b><u>Dry-weather WLAs for other permits (total recoverable metals)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Copper (µg/L)</th> <th style="width: 25%;">Lead (µg/L)</th> <th style="width: 25%;">Selenium (µg/L)</th> <th style="width: 25%;">Zinc (µg/L)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">24</td> <td style="text-align: center;">13</td> <td style="text-align: center;">5</td> <td style="text-align: center;">304</td> </tr> </tbody> </table>		Copper	Lead	Selenium	Zinc	Ballona Creek	818.9	438.6	171	10,416.2	Sepulveda Channel	370.7	198.8	77	4,711.1		Copper	Lead	Selenium	Zinc	<b><u>Ballona Creek</u></b>					MS4 permittees	807.7	432.6	169	10,273.1	Caltrans	11.2	6.0	2	143.1	<b><u>Sepulveda Channel</u></b>					MS4 Permittees	365.6	196.1	76	4646.4	Caltrans	5.1	2.7	1	64.7	Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)	24	13	5	304
	Copper	Lead	Selenium	Zinc																																																							
Ballona Creek	818.9	438.6	171	10,416.2																																																							
Sepulveda Channel	370.7	198.8	77	4,711.1																																																							
	Copper	Lead	Selenium	Zinc																																																							
<b><u>Ballona Creek</u></b>																																																											
MS4 permittees	807.7	432.6	169	10,273.1																																																							
Caltrans	11.2	6.0	2	143.1																																																							
<b><u>Sepulveda Channel</u></b>																																																											
MS4 Permittees	365.6	196.1	76	4646.4																																																							
Caltrans	5.1	2.7	1	64.7																																																							
Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)																																																								
24	13	5	304																																																								

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions																																																
	<p><b>Wet Weather</b></p> <p>Wet-weather waste load allocation for storm water is equal to the total loading capacity minus the load allocation for direct atmospheric deposition. Wet-weather waste load allocations for the grouped storm water permittees apply to all reaches and tributaries.</p> <p style="text-align: center;"><b><u>Wet-weather Storm Water WLAs (total recoverable metals)</u></b></p> <hr style="width: 100%;"/> <p style="text-align: center;">Waste Load Allocation (grams/day)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Copper</td> <td style="width: 60%;">1.79E-05 x Daily storm volume (L)</td> </tr> <tr> <td>Lead</td> <td>5.87E-05 x Daily storm volume (L)</td> </tr> <tr> <td>Selenium</td> <td>4.97E-06 x Daily storm volume (L)</td> </tr> <tr> <td>Zinc</td> <td>1.18E-04 x Daily storm volume (L)</td> </tr> </table> <p>The storm water waste load allocations are apportioned between the MS4 permittees, Caltrans, the general construction and the general industrial storm water permits based on an areal weighting approach.</p> <p style="text-align: center;"><b><u>Wet-weather Storm Water WLAs Apportioned Between Storm Water Permits (total recoverable metals)</u></b></p> <hr style="width: 100%;"/> <p style="text-align: center;">Waste Load Allocation (grams/day)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><u>Copper</u></td> </tr> <tr> <td style="width: 40%;">MS4 Permittees</td> <td style="width: 60%;">1.70E-05 x Daily storm volume (L)</td> </tr> <tr> <td>Caltrans</td> <td>2.37E-07 x Daily storm volume (L)</td> </tr> <tr> <td>General Construction</td> <td>4.94E-07 x Daily storm volume (L)</td> </tr> <tr> <td>General Industrial</td> <td>1.24E-07 x Daily storm volume (L)</td> </tr> <tr> <td colspan="2"><u>Lead</u></td> </tr> <tr> <td>MS4 Permittees</td> <td>5.58E-05 x Daily storm volume (L)</td> </tr> <tr> <td>Caltrans</td> <td>7.78E-07 x Daily storm volume (L)</td> </tr> <tr> <td>General Construction</td> <td>1.62E-06 x Daily storm volume (L)</td> </tr> <tr> <td>General Industrial</td> <td>4.06E-07 x Daily storm volume (L)</td> </tr> <tr> <td colspan="2"><u>Selenium</u></td> </tr> <tr> <td>MS4 Permittees</td> <td>4.73E-06 x Daily storm volume (L)</td> </tr> <tr> <td>Caltrans</td> <td>6.59E-08 x Daily storm volume (L)</td> </tr> <tr> <td>General Construction</td> <td>1.37E-07 x Daily storm volume (L)</td> </tr> <tr> <td>General Industrial</td> <td>3.44E-08 x Daily storm volume (L)</td> </tr> <tr> <td colspan="2"><u>Zinc</u></td> </tr> <tr> <td>MS4 Permittees</td> <td>1.13E-04 x Daily storm volume (L)</td> </tr> <tr> <td>Caltrans</td> <td>1.57E-06 x Daily storm volume (L)</td> </tr> <tr> <td>General Construction</td> <td>3.27E-06 x Daily storm volume (L)</td> </tr> <tr> <td>General Industrial</td> <td>8.19E-07 x Daily storm volume (L)</td> </tr> </table> <p>Each storm water permittee enrolled under the general construction or industrial storm water permits will receive an individual waste load allocation on a per acre basis, based on the acreage of their facility.</p>	Copper	1.79E-05 x Daily storm volume (L)	Lead	5.87E-05 x Daily storm volume (L)	Selenium	4.97E-06 x Daily storm volume (L)	Zinc	1.18E-04 x Daily storm volume (L)	<u>Copper</u>		MS4 Permittees	1.70E-05 x Daily storm volume (L)	Caltrans	2.37E-07 x Daily storm volume (L)	General Construction	4.94E-07 x Daily storm volume (L)	General Industrial	1.24E-07 x Daily storm volume (L)	<u>Lead</u>		MS4 Permittees	5.58E-05 x Daily storm volume (L)	Caltrans	7.78E-07 x Daily storm volume (L)	General Construction	1.62E-06 x Daily storm volume (L)	General Industrial	4.06E-07 x Daily storm volume (L)	<u>Selenium</u>		MS4 Permittees	4.73E-06 x Daily storm volume (L)	Caltrans	6.59E-08 x Daily storm volume (L)	General Construction	1.37E-07 x Daily storm volume (L)	General Industrial	3.44E-08 x Daily storm volume (L)	<u>Zinc</u>		MS4 Permittees	1.13E-04 x Daily storm volume (L)	Caltrans	1.57E-06 x Daily storm volume (L)	General Construction	3.27E-06 x Daily storm volume (L)	General Industrial	8.19E-07 x Daily storm volume (L)
Copper	1.79E-05 x Daily storm volume (L)																																																
Lead	5.87E-05 x Daily storm volume (L)																																																
Selenium	4.97E-06 x Daily storm volume (L)																																																
Zinc	1.18E-04 x Daily storm volume (L)																																																
<u>Copper</u>																																																	
MS4 Permittees	1.70E-05 x Daily storm volume (L)																																																
Caltrans	2.37E-07 x Daily storm volume (L)																																																
General Construction	4.94E-07 x Daily storm volume (L)																																																
General Industrial	1.24E-07 x Daily storm volume (L)																																																
<u>Lead</u>																																																	
MS4 Permittees	5.58E-05 x Daily storm volume (L)																																																
Caltrans	7.78E-07 x Daily storm volume (L)																																																
General Construction	1.62E-06 x Daily storm volume (L)																																																
General Industrial	4.06E-07 x Daily storm volume (L)																																																
<u>Selenium</u>																																																	
MS4 Permittees	4.73E-06 x Daily storm volume (L)																																																
Caltrans	6.59E-08 x Daily storm volume (L)																																																
General Construction	1.37E-07 x Daily storm volume (L)																																																
General Industrial	3.44E-08 x Daily storm volume (L)																																																
<u>Zinc</u>																																																	
MS4 Permittees	1.13E-04 x Daily storm volume (L)																																																
Caltrans	1.57E-06 x Daily storm volume (L)																																																
General Construction	3.27E-06 x Daily storm volume (L)																																																
General Industrial	8.19E-07 x Daily storm volume (L)																																																

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions																				
	<p style="text-align: center;"><b>Individual per Acre WLAs for General Construction or Industrial Storm Water Permittees (total recoverable metals)</b></p> <hr/> <p style="text-align: center;">Waste Load Allocation (grams/day/acre)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Copper</td> <td style="width: 30%;">2.20E-10 x</td> <td style="width: 40%;">Daily storm volume (L)</td> </tr> <tr> <td>Lead</td> <td>7.20E-10 x</td> <td>Daily storm volume (L)</td> </tr> <tr> <td>Selenium</td> <td>6.10E-11 x</td> <td>Daily storm volume (L)</td> </tr> <tr> <td>Zinc</td> <td>1.45E-09 x</td> <td>Daily storm volume (L)</td> </tr> </table> <p>Concentration-based wet-weather waste load allocations are assigned to the minor NPDES permits and general non-storm water NPDES permits that discharge to Ballona Creek or its tributaries. Any future minor NPDES permits or enrollees under a general non-storm water NPDES permit will also be subject to the concentration-based waste load allocations.</p> <hr/> <p style="text-align: center;"><b>Wet-weather WLAs for other permits (total recoverable metals)</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Copper (µg/L)</th> <th style="text-align: center;">Lead (µg/L)</th> <th style="text-align: center;">Selenium (µg/L)</th> <th style="text-align: center;">Zinc (µg/L)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">18</td> <td style="text-align: center;">59</td> <td style="text-align: center;">5</td> <td style="text-align: center;">119</td> </tr> </tbody> </table>	Copper	2.20E-10 x	Daily storm volume (L)	Lead	7.20E-10 x	Daily storm volume (L)	Selenium	6.10E-11 x	Daily storm volume (L)	Zinc	1.45E-09 x	Daily storm volume (L)	Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)	18	59	5	119
Copper	2.20E-10 x	Daily storm volume (L)																			
Lead	7.20E-10 x	Daily storm volume (L)																			
Selenium	6.10E-11 x	Daily storm volume (L)																			
Zinc	1.45E-09 x	Daily storm volume (L)																			
Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)																		
18	59	5	119																		
<b>Margin of Safety</b>	<p>There is an implicit margin of safety through the use of conservative values for the conversion from total recoverable metals to the dissolved fraction during dry and wet weather. In addition, the TMDL includes a margin of safety by evaluating dry-weather and wet-weather conditions separately and assigning allocations based on two disparate critical conditions.</p>																				
<b>Implementation</b>	<p>The regulatory mechanisms used to implement the TMDL will include the Los Angeles County Municipal Storm Water NPDES Permit (MS4), the State of California Department of Transportation (Caltrans) Storm Water Permit, minor NPDES permits, general NPDES permits, general industrial storm water NPDES permits, and general construction storm water NPDES permits. Nonpoint sources will be regulated through the authority contained in Sections 13263 and 13269 of the Water Code, in conformance with the State Water Resources Control Board's Nonpoint Source Implementation and Enforcement Policy (May 2004). Each NPDES permit assigned a WLA shall be reopened or amended at re-issuance, in accordance with applicable laws, to incorporate the applicable WLAs as a permit requirement.</p> <p>The Regional Board shall reconsider this TMDL in five years after the effective date of the TMDL based on additional data obtained from special studies. Table 7-12.2 presents the implementation schedule for the responsible permittees.</p> <p><b>Minor NPDES Permits and General Non-Storm Water NPDES Permits:</b></p> <p>Permit writers may translate applicable waste load allocations into effluent limits for the minor and general NPDES permits by applying the effluent limitation procedures in Section 1.4 of the State Water Resources Control Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of</p>																				

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions								
	<p>California (2000) or other applicable engineering practices authorized under federal regulations. Compliance schedules may be established in individual NPDES permits, allowing up to 5 years within a permit cycle to achieve compliance. Compliance schedules may not be established in general NPDES permits. A discharger that can not comply immediately with effluent limitations specified to meet waste load allocations will be required to apply for an individual permit, in order to, demonstrate the need for a compliance schedule.</p> <p>Permittees that hold individual NPDES permits and solely discharge storm water may be allowed (at Regional Board discretion) compliance schedules up to 10 years from the effective date of the TMDL to achieve compliance with final WLAs.</p> <p><b>General Industrial Storm Water Permits:</b></p> <p>The Regional Board will develop a watershed specific general industrial storm water permit to incorporate waste load allocations.</p> <p><u>Dry-weather Implementation</u></p> <p>Non-storm water flows authorized by Order No. 97-03 DWQ, or any successor order, are exempt from the dry-weather waste load allocation equal to zero. Instead, these authorized non-storm water flows shall meet the concentration-based waste load allocations assigned to the other NPDES Permits. The dry-weather waste load allocation equal to zero applies to unauthorized non-storm water flows, which are prohibited by Order No. 97-03 DWQ.</p> <p>It is anticipated that the dry-weather waste load allocations will be implemented by requiring improved best management practices (BMPs) to eliminate the discharge of non-storm water flows. However, the permit writers must provide adequate justification and documentation to demonstrate that specified BMPs are expected to result in attainment of the numeric waste load allocations.</p> <p><u>Wet-weather Implementation</u></p> <p>The general industrial storm water permittees are allowed interim wet-weather concentration-based waste load allocations based on benchmarks contained in EPA's Storm Water Multi-sector General Permit for Industrial Activities. The interim waste load allocations apply to all industry sectors for a period not to exceed ten years from the effective date of the TMDL.</p> <p><b>Interim Wet-Weather WLAs for General Industrial Storm Water Permittees (total recoverable metals)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Copper (µg/L)</th> <th style="text-align: center;">Lead (µg/L)</th> <th style="text-align: center;">Selenium (µg/L)</th> <th style="text-align: center;">Zinc (µg/L)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">63.6</td> <td style="text-align: center;">81.6</td> <td style="text-align: center;">238.5</td> <td style="text-align: center;">117</td> </tr> </tbody> </table> <p>In the first five years from the effective date of the TMDL, interim waste load allocations will not be interpreted as enforceable permit conditions. If monitoring demonstrates that interim waste load</p>	Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)	63.6	81.6	238.5	117
Copper (µg/L)	Lead (µg/L)	Selenium (µg/L)	Zinc (µg/L)						
63.6	81.6	238.5	117						

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions
	<p>allocations are being exceeded, the permittee shall evaluate existing and potential BMPs, including structural BMPs, and implement any necessary BMP improvements. It is anticipated that monitoring results and any necessary BMP improvements would occur as part of an annual reporting process. After five years from the effective date of the TMDL, interim waste load allocations shall be translated into enforceable permit conditions. Compliance with permit conditions may be demonstrated through the installation, maintenance, and monitoring of Regional Board-approved BMPs. If this method of compliance is chosen, permit writers must provide adequate justification and documentation to demonstrate that BMPs are expected to result in attainment of interim waste load allocations.</p> <p>The general industrial storm water permits shall achieve final wet-weather waste load allocations no later than 10 years from the effective date of the TMDL, which shall be expressed as NPDES water quality-based effluent limitations. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs if adequate justification and documentation demonstrate that BMPs are expected to result in attainment of waste load allocations.</p> <p><b>General Construction Storm Water Permits:</b></p> <p>Waste load allocations will be incorporated into the State Board general permit upon renewal or into a watershed-specific general permit developed by the Regional Board.</p> <p><u>Dry-weather Implementation</u></p> <p>Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order No. 99-08 DWQ), or any successor order, are exempt from the dry-weather waste load allocation equal to zero as long as they comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these authorized non-storm discharges shall be (1) infeasible to eliminate (2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and (3) not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order. Unauthorized non-storm water flows are already prohibited by Order No. 99-08 DWQ.</p> <p><u>Wet-weather Implementation</u></p> <p>Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the final waste load allocations assigned to construction storm water permittees. Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the effective date of the TMDL. General construction storm water permittees will be considered</p>

## Attachment A to Resolution No. R05-007

<b>Element</b>	<b>Key Findings and Regulatory Provisions</b>
	<p>in compliance with final waste load allocations if they implement these Regional Board approved BMPs. All permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with final waste load allocations.</p> <p><b>MS4 and Caltrans Storm Water Permits:</b></p> <p>The County of Los Angeles, City of Los Angeles, Beverly Hills, Culver City, Inglewood, Santa Monica, and West Hollywood are jointly responsible for meeting the mass-based waste load allocations for the MS4 permittees. Caltrans is responsible for meeting their mass-based waste load allocations, however, they may choose to work with the MS4 permittees. The primary jurisdiction for the Ballona Creek watershed is the City of Los Angeles.</p> <p>Applicable CTR limits are being met most of the time during dry weather, with episodic exceedances. Due to the expense of obtaining accurate flow measurements required for calculating loads, concentration-based permit limits may apply during dry weather. These concentration-based limits would be equal to the dry-weather concentration-based waste load allocations assigned to the other NPDES permits.</p> <p>Each municipality and permittee will be required to meet the storm water waste load allocation at the designated TMDL effectiveness monitoring points. A phased implementation approach, using a combination of non-structural and structural BMPs may be used to achieve compliance with the stormwater waste load allocations. The administrative record and the fact sheets for the MS4 and Caltrans storm water permits must provide reasonable assurance that the BMPs selected will be sufficient to implement the waste load allocations.</p> <p>The implementation schedule for the MS4 and Caltrans permittees consists of a phased approach, with compliance to be achieved in prescribed percentages of the watershed, with total compliance to be achieved within 15 years.</p>
<p><b><i>Seasonal Variations and Critical Conditions</i></b></p>	<p>Seasonal variations are addressed by developing separate waste load allocations for dry weather and wet weather.</p> <p>Based on long-term flow records, dry-weather flows in Ballona Creek are estimated to be 14 cubic feet per second (cfs). Since, this flow has been very consistent, 14 cfs is used to define the critical dry-weather flow for Ballona Creek at Sawtelle Boulevard (upstream of Sepulveda Canyon Channel). There are no historic flow records to determine the average long-term flows for Sepulveda Canyon Channel. Therefore, in the absence of historical records the 2003 dry-weather characterization study measurements are assumed reasonable estimates of flow for this</p>

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions										
	<p>channel. The critical dry-weather flow for Sepulveda Canyon Channel is defined as the average flow of 6.3 cfs.</p> <p>Wet-weather allocations are developed using the load-duration curve concept. The total wet-weather waste load allocation varies by storm, therefore, given this variability in storm water flows, no justification was found for selecting a particular sized storm as the critical condition.</p>										
<b>Monitoring</b>	<p>Effective monitoring will be required to assess the condition of the Ballona Creek and to assess the on-going effectiveness of efforts by dischargers to reduce metals loading to Ballona Creek. Special studies may also be appropriate to provide further information about new data, new or alternative sources, and revised scientific assumptions. Below the Regional Board identifies the various goals of monitoring efforts and studies. The programs, reports, and studies will be developed in response to subsequent orders issued by the Executive Officer.</p> <p><b>Ambient monitoring</b></p> <p>An ambient monitoring program is necessary to assess water quality throughout Ballona Creek and its tributaries and the progress being made to remove the metals impairments. The MS4 and Caltrans storm water NPDES permittees are jointly responsible for implementing the ambient monitoring program. The responsible agencies shall analyze samples for total recoverable metals and dissolved metals, including cadmium and silver, and hardness once a month at each monitoring location. The reported detection limits shall be lower than the hardness adjusted CTR criteria to determine if water quality objectives are being met. There are three ambient monitoring locations.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;"><b>Ambient Monitoring Locations</b></th> </tr> <tr> <th style="text-align: left;">Waterbody</th> <th style="text-align: left;">Location</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td>At Sawtelle Boulevard</td> </tr> <tr> <td>Sepulveda Channel</td> <td>Just Above the Confluence with Ballona Creek</td> </tr> <tr> <td>Ballona Creek</td> <td>At Inglewood Boulevard</td> </tr> </tbody> </table> <p><b>TMDL Effectiveness Monitoring</b></p> <p>The MS4 and Caltrans storm water NPDES permittees are jointly responsible for assessing the progress in reducing pollutant loads to achieve the TMDL. The MS4 and Caltrans storm water NPDES permittees are required to submit for approval of the Executive Officer a coordinated monitoring plan that will demonstrate the effectiveness of the phased implementation schedule for this TMDL, which requires attainment of the applicable waste load allocations in prescribed percentages of the watershed over a 15-year period. The monitoring locations specified for the ambient monitoring program may be used as the effectiveness monitoring locations.</p> <p>The MS4 and Caltrans storm water NPDES permittees will be found to be effectively meeting the dry-weather waste load allocations if the in-stream pollutant concentrations or load at the first downstream monitoring location is equal to or less than the corresponding</p>	<b>Ambient Monitoring Locations</b>		Waterbody	Location	Ballona Creek	At Sawtelle Boulevard	Sepulveda Channel	Just Above the Confluence with Ballona Creek	Ballona Creek	At Inglewood Boulevard
<b>Ambient Monitoring Locations</b>											
Waterbody	Location										
Ballona Creek	At Sawtelle Boulevard										
Sepulveda Channel	Just Above the Confluence with Ballona Creek										
Ballona Creek	At Inglewood Boulevard										

## Attachment A to Resolution No. R05-007

Element	Key Findings and Regulatory Provisions
	<p>concentration- or load-based waste load allocation. Alternatively, effectiveness of the TMDL may be assessed at the storm drain outlet based on the concentration-based waste load allocation for the receiving water. For storm drains that discharge to other storm drains, the waste load allocation will be based on the waste load allocation for the ultimate receiving water for that storm drain system.</p> <p>The MS4 and Caltrans storm water NPDES permittees will be found to be effectively meeting the wet-weather waste load allocations if the loading at the most downstream monitoring location is equal to or less than the wet-weather waste load allocation. Compliance with individual general construction and industrial storm water permittees will be based on monitoring of discharges at the property boundary. Compliance may be assessed based on concentration and/or load allocations.</p> <p>The general storm water permits shall contain a model monitoring and reporting program to evaluate BMP effectiveness. A permittee enrolled under the general permits shall have the choice of conducting individual monitoring based on the model program or participating in a group monitoring effort. MS4 permittees are encouraged to take the lead in group monitoring efforts for industrial facilities under their jurisdiction because compliance with waste load allocations by these facilities will in many cases translate to reductions in metals loads to the MS4 system.</p> <p><b>Special studies</b></p> <p>The implementation schedule, Table 7-12.2, allows time for special studies that may serve to refine the estimate of loading capacity, waste load and/or load allocations, and other studies that may serve to optimize implementation efforts. The Regional Board will re-consider the TMDL in the fifth year after the effective date in light of the findings of these studies. Studies may include:</p> <ul style="list-style-type: none"> <li>• Refinement of hydrologic and water quality model</li> <li>• Additional source assessment</li> <li>• Refinement of potency factors correlation between total suspended solids and metals loadings during dry and wet weather</li> <li>• Correlation between short-term rainfall intensity and metals loadings for use in sizing in-line structural BMPs</li> <li>• Correlation between storm volume and total recoverable metals loading for use in sizing storm water retention facilities</li> <li>• Refined estimates of metals partitioning coefficients, conversion factors, and site-specific toxicity.</li> <li>• Evaluation of potential contribution of aerial deposition and sources of aerial deposition.</li> </ul>

## Attachment A to Resolution No. R05-007

**Table 7-12.2. Ballona Creek Metals TMDL: Implementation Schedule**

Date	Action
Effective date of the TMDL	Regional Board permit writers shall incorporate the waste load allocations into the NPDES permits. Waste load allocations will be implemented through NPDES permit limits in accordance with the implementation schedule contained herein, at the time of permit issuance or re-issuance.
4 years after effective date of the TMDL	Responsible jurisdictions and agencies shall provide to the Regional Board results of the special studies.
5 years after effective date of the TMDL	The Regional Board shall reconsider this TMDL to re-evaluate the waste load allocations and the implementation schedule.
<b>MINOR NPDES PERMITS AND GENERAL NON-STORM WATER NPDES PERMITS</b>	
Upon permit issuance or renewal	The non-storm water NPDES permittees shall achieve the waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Compliance schedules may allow up to five years in individual NPDES permits to meet permit requirements. Compliance schedules may not be established in general NPDES permits. Permittees that hold individual NPDES permits and solely discharge storm water may be allowed (at Regional Board discretion) compliance schedules up to 10 years from the effective date of the TMDL to achieve compliance with final WLAs.
<b>GENERAL INDUSTRIAL STORM WATER PERMITS</b>	
Upon permit issuance or renewal	The general industrial storm water NPDES permittees shall achieve dry-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs. Permittees shall begin to install and test BMPs to meet the interim wet-weather WLAs. BMP effectiveness monitoring will be implemented to determine progress in achieving interim wet-weather waste load allocations.
5 years after effective date of the TMDL	The general industrial storm water NPDES permittees shall achieve the interim wet-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs. Permittees shall begin an iterative BMP process including BMP effectiveness monitoring to achieve compliance

## Attachment A to Resolution No. R05-007

Date	Action
	with final wet-weather WLAs.
10 years after the effective date of the TMDL	The general industrial storm water NPDES permittees shall achieve the final wet-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.
<b>GENERAL CONSTRUCTION STORM WATER PERMITS</b>	
Upon permit issuance, renewal, or re-opener	Non-storm water flows not authorized by Order No. 99-08 DWQ, or any successor order, shall achieve dry-weather waste load allocations of zero. Waste load allocations shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.
7 years from the effective date of the TMDL	The construction industry will submit the results of wet-weather BMP effectiveness studies to the Regional Board for consideration. In the event that no effectiveness studies are conducted and no BMPs are approved, permittees shall be subject to site-specific BMPs and monitoring to demonstrate BMP effectiveness.
8 years from the effective date of the TMDL	The Regional Board will consider results of the wet-weather BMP effectiveness studies and consider approval of BMPs no later than six years from the effective date of the TMDL.
9 years from the effective date of the TMDL	All general construction storm water permittees shall implement Regional Board-approved BMPs.
<b>MS4 AND CALTRANS STORM WATER PERMITS</b>	
12 months after the effective date of the TMDL	In response to an order issued by the Executive Officer, the MS4 and Caltrans storm water NPDES permittees must submit a coordinated monitoring plan, to be approved by the Executive Officer, which includes both ambient monitoring and TMDL effectiveness monitoring. Once the coordinated monitoring plan is approved by the Executive Officer ambient monitoring shall commence.
48 months after effective date of TMDL (Draft Report) 54 months after effective date of TMDL (Final Report)	MS4 and Caltrans storm water NPDES permittees shall provide a written report to the Regional Board outlining the drainage areas to be address and how these areas will achieve compliance with the waste load allocations. The report shall include implementation methods, an implementation schedule,

## Attachment A to Resolution No. R05-007

Date	Action
	proposed milestones, and any applicable revisions to the TMDL effectiveness monitoring plan.
6 years after effective date of the TMDL	The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 50% of the total drainage area served by the MS4 system is effectively meeting the dry-weather waste load allocations and 25% of the total drainage area served by the MS4 system is effectively meeting the wet-weather waste load allocations.
8 years after effective date of the TMDL	The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 75% of the total drainage area served by the MS4 system is effectively meeting the dry-weather waste load allocations.
10 years after effective date of the TMDL	The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 100% of the total drainage area served by the MS4 system is effectively meeting the dry-weather waste load allocations and 50% of the total drainage area served by the MS4 system is effectively meeting the wet-weather waste load allocations.
15 years after effective date of the TMDL	The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 100% of the total drainage area served by the MS4 system is effectively meeting both the dry-weather and wet-weather waste load allocations.